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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,833

06/18/2007

Stephen C. Kellogg

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EXAMINER

HUGHES, SCOTT A

ART UNIT

PAPER NUMBER

3663

MAIL DATE

DELIVERY MODE

08/06/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,833	Applicant(s) KELLOGG, STEPHEN C.	
	Examiner SCOTT A. HUGHES	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-20 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The references cited in the Search Report for PCT/US05/06643 have been considered, but will not be listed on any patent resulting from this application because they were not provided on a separate list in compliance with 37 CFR 1.98(a)(1). In order to have the references printed on such resulting patent, a separate listing, preferably on a PTO/SB/08A and 08B form, must be filed within the set period for reply to this Office action.

Drawings

The drawings are objected to as being too informal to permit all features, text, and numbers of the drawings to be determined.

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because features of the currently submitted drawings cannot be determined as the Figures are too dark and the text, arrows, and other features in some of the figures cannot be read or determined. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Objections

Claim 10 is objected to because of the following informalities: Claim 10 contains the limitation "three-dimensional software" is step (m) of the claim when it appears it should read "three-dimensional software." Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1-9 and 11-20 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the mini-volumes visual display from step (k)" in step (m) of the claim. There is insufficient antecedent basis for this limitation in step (m) of the claim. Step (k) of the claim states "flattening the time image of each refractor wave and semblance mini-volumes" but does not recite that the mini-volumes are part of a visual display. The flattening of the time image can be done through data processing without having a visual display present. Further, although step (i) of the claim states that a visualization program is operated to provide visual displays, nothing in steps (j) through (n) of the claim recites that these steps are performed within the visualization program or that steps (j) through (n) are operated within the program to provide a visual display of the data processing done in each step. Therefore, there is a lack of antecedent basis for the term "the mini-volumes visual display from step (k)" in step (m) of the claim.

Claims 2-9 depend from claim 1 and are therefore also indefinite.

Claim 2 recites the limitation "the X/Y-space." There is insufficient antecedent basis for this limitation in the claim because there has been no previous mention of an X/Y space or that there is a display that displays in an X/Y space in claim 1.

Regarding claims 1 and 11, the phrase "such as" in the preamble of the claim describing the subsurface hazards renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). It is unclear whether the method is directed to location of all subsurface drilling hazards, or only hazards including or similar to karsts, voids, unconsolidated discontinuities and partial collapses.

Claims 2-9 and 12-20 which depend from claims 1 and 11 are therefore also indefinite.

Claim 12 recites the limitation "the X/Y-space." There is insufficient antecedent basis for this limitation in the claim because there has been no previous mention of an X/Y space or that there is a display that displays in an X/Y space in claim 11.

Allowable Subject Matter

Claim 10 would be in allowable form if the objection to the claim for containing minor informalities is overcome.

The following is an examiner's statement of reasons for indicating allowable subject matter:

Art Unit: 3663

The closest prior art teaches visualization of data for locating objects in drilling processes. The closest prior art teaches analyzing refracted data, filtering the data, and using visualization programs. The closest prior art does not teach the claimed process of claim 10 including separating the refractors into separate datasets using offset ranges after correcting and filtering the data, performing quality control analysis and corrections using a three dimensional visualization program, loading pre-existing well coordinates or anticipated well bore locations into the program to calibrate against the seismic data, and analyzing the semblance cubes for consistency. The closest prior art does not teach the semblance cube processing and calibration/comparison of well location data to the seismic data as claimed to identify karsts and other drilling hazards.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SCOTT A. HUGHES whose telephone number is (571)272-6983. The examiner can normally be reached on M-F 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3663

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Scott A. Hughes/
Examiner, Art Unit 3663